NON-PUBLIC?: N
ACCESSION #: 8904140209
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Davis-Besse, Unit No. 1 PAGE: 1 OF 3

DOCKET NUMBER: 05000346

TITLE: Reactor Trip From 100 Percent Power Due to Spurious CRD Trip Confirm Signal
EVENT DATE: 01/18/89 LER #: 89-003-02 REPORT DATE: 04/01/89

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Jan C. Stotz, Engineer - Planning TELEPHONE: 419 249-5000

COMPONENT FAILURE DESCRIPTION:
CAUSE: A SYSTEM: AA COMPONENT: BD MANUFACTURER: B045
REPORTABLE TO NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On January 18, 1989, at 1344 hours, with Control Rod Drive (CRD) trip breaker testing in progress, the reactor tripped from 100 percent Rated Thermal Power (RTP). The trip was initiated by a spurious CRD Trip Confirm Signal which caused the Integrated Control System (ICS) to initiate the Rapid Feedwater Reduction (RFR). This resulted in feedwater flow being reduced to about six percent while the Reactor was still at 100 percent. This caused the Reactor Coolant System (RCS) pressure to increase rapidly until it reached the high pressure trip setpoint of 2300 psig where the Reactor Protection System (RPS) tripped the reactor. The post-trip response of the plant was normal with no major problems.

The cause of the spurious CRD Trip Confirm Signal was narrowed to at least one of three logic boards in the CRD Systems Logic Cabinet No. 1. The boards will be returned to the vendor for troubleshooting. If anything other than a random component failure is determined, a revision to this report will be issued.

This event is reportable per 10CFR50.73(a)(2)(iv) as an automatic actuation of RPS.

END OF ABSTRACT

Description of Occurrence:

On January 18, 1989, at 1344 hours, with the Control Rod Drive System, CRD, (AA) trip breaker testing in progress the Reactor tripped from 100 percent. The reactor was tripped by the Reactor Protection System, RPS, (JC) when the Reactor Coolant System, RCS, (AB) reached the high pressure trip setpoint of 2300 psig. The post-trip response was normal with RCS temperatures and steam generator pressure remaining in an acceptable range.

Engineered Safety Features (ESF) equipment was not challenged.

Verbal notification was made to the NRC via the Emergency Notification System (ENS) at 1518 hours on January 18, 1989.

This report is being submitted per 10CFR50.73 as a plant condition that resulted in the automatic actuation of the RPS.

Designation of Apparent Cause of Occurrence:

The initiating event was a spurious CRD Trip Confirm Signal causing the Integrated Control System, ICS, (JA) to initiate the RFR. RFR shuts the Main Feedwater Valves and positions the Startup Feedwater Valves to approximately 17 percent full open. With the reactor at 100 percent of full power and insufficient heat being removed by the reduced feedwater flow, RCS pressure increased rapidly. RPS tripped the reactor when RCS pressure reached 2300 psig.

The source of the spurious CRD Trip Confirm Signal has been narrowed to at least one of three logic boards. These boards have been removed and bench tested to find the root cause, but the condition did not recur. These boards will be returned to the vendor for further troubleshooting. If the cause is other than random component failure, a revision to this report will be issued.

Analysis of Occurrence:

The RPS responded properly in this event by tripping the reactor on high pressure. The Safety Features Actuation System, SFAS, (JE) was not challenged. Minimum RCS pressure was 1875 psig. The Steam and Feedwater Rupture Control System, SFRCS, (JB) was not challenged. Main steam pressure

was maintained above 1000 psig.

TEXT PAGE 3 OF 3

Corrective Action:

Under Maintenance Work Order (MWO) 1-89-0177-00, the three replacement logic boards were bench tested and installed.

Failure Data:

Although there have been previous reports where feedwater control problems lead up to a reactor trip, this is the first report where a spurious CRD Trip Confirm Signal caused the feedwater runback.

REPORT NO. NP-33-89-004 PCAQ NO.: 89-0043

ATTACHMENT 1 TO 8904140209 PAGE 1 OF 1

TOLEDO EDISON

April 1, 1989 Log No.: KA89-04012
NP-33-89-004, Rev. 2

Docket No. 50-346
License No. NPF-3

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Gentlemen:

LER No. 89-003, Revision 2
Davis-Besse Nuclear Power Station, Unit No. 1
Date of Occurrence - January 18, 1989

Enclosed is Revision 2 to Licensee Event Report 89-003. The revisions to the report are indicated by a revision bar in the left margin of each page.
Please destroy or mark superseded on your previous copy of this report and replace with the attached revision.

Yours truly,

Louis F. Storz
Plant Manager

Davis-Besse Nuclear Power Station

LFS/plg

Enclosure

cc: Mr. A. Bert Davis
Regional Administrator
USNRC Region III

Mr. Paul Byron
DB-1 NRC Resident Inspector

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